

PRE-EXAMINATION BOOKLET

FOR

FIREFIGHTER

ENTRANCE LEVEL EXAMINATION



PREPARED BY

OFFICE OF STATE EXAMINER

MUNICIPAL FIRE AND POLICE CIVIL SERVICE

TEST DEVELOPMENT AND RESEARCH DIVISION

DO NOT BRING THIS BOOKLET TO THE EXAM SITE

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INTRODUCTION

One of the first steps toward becoming a firefighter is successfully passing a civil service examination which is administered by the Office of State Examiner for Municipal Fire and Police Civil Service. This booklet will provide you with important information about the examination process, some helpful hints on taking tests, and a practice test with questions that are similar to those that are actually on the firefighter examination.

You do not need to already have a knowledge of firefighting in order to pass this examination. The test has been designed to evaluate knowledge, skills, and abilities that are needed in order to learn the job of firefighting. For example, in order to successfully complete firefighter training, you must be able to read and comprehend material on firefighting procedures. Therefore, part of the written examination contains a section of questions on reading comprehension based upon material that is like that which must be read on the job during your training period.

BRIEF DESCRIPTION OF THE TEST

The firefighter test consists of two parts: a test in following oral directions and a multiple-choice written examination.

Because of the hazardous and dangerous nature of the job, firefighters must be able to comprehend and precisely follow oral directions given by the officer in charge of the fire scene. The Oral Directions Test has been designed to determine how well you are able to follow oral directions in accomplishing simple tasks. This part of the examination will take approximately thirty minutes. Because this portion of the exam consists of taped oral directions, it is very important that you arrive at the exam site a few minutes early. **You will not be admitted to the exam once the taped instructions have started.**

The second part of the exam for firefighter is a multiple-choice test consisting of 100 questions which are divided into eight subject areas: learning ability and memorizing information, lecture notes, reading comprehension, prioritizing/problem solving, human relations, math, mechanical aptitude, and maps/diagrams/spatial relations. You will have two hours and ten minutes in which to complete this part of the examination.

HOW THE TEST IS GRADED

Regardless of the area in which you take your test, all test papers are graded in Baton Rouge in the Office of State Examiner. Your scores on both parts of the firefighter exam are statistically combined into a single score. In order to successfully pass the examination and be considered for employment, you must make a score of 75 or above. The scores of all candidates taking the exam will be reported to the Fire and Police Civil Service Board in your jurisdiction, and the local board will notify you of your grade on the exam. When there is an opening in the Fire Department in your jurisdiction, the Fire and Police Civil Service Board will place on an employment list the names of all applicants who have successfully passed the examination. The appointing authority for your Fire Department may then fill the vacancy by selecting any one of the names certified by the board on the employment list.

HOW TO USE THIS BOOKLET

You may actually practice your test taking skills by answering the sample questions provided in this booklet. If you desire further practice, you may also obtain books from your local library that contain sample civil service test questions. Should you decide to use additional practice material, it would be most beneficial to practice on the questions that are similar to the sample questions in this booklet. For example, it would be helpful to practice reading comprehension or math questions, but English questions would not particularly help you to prepare for this exam.

HOW TO USE THE SPECIAL ANSWER SHEET

For both parts of the FIREFIGHTER examination you will record your answers on a separate answer sheet rather than directly into the test booklet. A sample answer sheet has been provided at the back of this booklet following page 45. You may wish to detach that answer sheet at this time so that you may look at it as you read these directions. Prior to the examination, you will be given detailed instructions on how to fill in the required information on the answer sheet. The front side of the answer sheet contains personal information such as your name and social security number as well as information about the jurisdiction. You must follow the examiner's directions exactly so that your responses may be correctly scanned into the computer.

Some of the information requested on the answer sheet requires that you print information in blocks. After you have printed the required information in the blocks, you must also fill in the oval in the vertical column below each block which corresponds to the letter or number in the block. The first row of boxes is for your name. In the example below, John E. Smith entered his name in the boxes by placing one letter in each box, while skipping a space (block) between each name or initial. Once his name was correctly printed in the boxes, the oval corresponding to that letter in the column below was filled in.

[illegible]

You may practice recording the required information on the answer sheet by printing your name in the correct spaces on the front of the sample answer sheet.

The back of the answer sheet contains more information about the examination. In recording your answer choices, you should use only the No. 2 pencil provided at the exam site and mark only one answer for each question number. It is extremely important that you make your mark dark and that you completely fill the oval. In the example below, answer "3" was chosen as the correct answer and the oval over the "3" was filled in completely. Erase your original mark completely to change your answer. Do not make any stray marks on the answer sheet.

EXAMPLE: ① ② ③ ④ ⑤

On the sample answer sheet, find the words "TEST ANSWERS" over the blocked area with numbers 1-192. This is where you will record your answers to the test questions.

HOW TO TAKE THE ORAL DIRECTIONS TEST

In addition to the sample answer sheet which you have already removed from the back of this booklet, you should also remove the page marked "Oral Directions Test" which may be found at the back of this booklet following page 45.

While the actual Oral Directions Test has been tape recorded to standardize testing conditions, you may practice taking this type of test by having someone read the sample instructions on page 6 to you. Before you begin, however, become familiar with the following hints for taking this type of test:

- Listen carefully and do exactly what the instructions tell you to do. Remember that it is, after all, a test in following directions.
- While only four answer choices are used for the multiple-choice portion of the exam, all five answer choices will be used for the Oral Directions Test.
- You will use the third column of numbers on your answer sheet in recording your answers to this part of the exam. (The column begins with question No. 97.)

- As you listen to the instructions, be certain that you answer each question beside the question number or numbers mentioned in the directions. Do not become confused if some question numbers are skipped.
- If you get behind or miss an instruction, do not panic! Simply skip that instruction and get back on track when the next instruction is given.

After you have practiced by having someone read the practice oral directions to you, compare the answers you have marked with the correct answers on page 36.

PRACTICE ORAL DIRECTIONS TEST

Note: Please have someone read these sample instructions to you:

"This is some practice in following directions. Do exactly what I tell you to do, as I tell you to do it. I will give each direction only once, so you must listen carefully. Now pay close attention and do exactly what I say.

Across the bottom of the Oral Directions Test, you will see five different times of day, numbered 1 through 5. For question number 106 on your answer sheet, mark the number corresponding to the time that is the earliest in the morning.

(Pause)

On the right side of the Oral Directions Test, you will see two circles, two squares, and a rectangle. For question number 103, if the larger circle is next to the larger square, mark answer number 4. If the smaller circle is next to the larger square, mark number 2. For question number 104, mark answer number 3, if the larger square has an "X" in it. If the larger square does not have an "X" in it, mark answer number 5.

(Pause)

To the left of the circles, you will see a list of words: airplane, absent, accent, apple, and angel. Using your scratch sheet, arrange these words in correct alphabetical order, and number them 1 through 5. Now, for question number 105, mark the number for the word "airplane."

(Pause)

Now, if 7:45 is the same as a quarter to eight, mark number 2 for number 101 and 4 for 102. If 7:45 is not the same as a quarter to eight, mark number 3 for number 101 and 5 for number 102."

(Pause)

Now, compare your answers with the correct answers found on page 36.

HOW TO TAKE THE WRITTEN MULTIPLE-CHOICE TEST

The written examination is divided into eight sections. The next part of this booklet contains sample questions from each of the eight sections. Before you begin, however, become familiar with the helpful hints for taking a multiple-choice test:

1. **Know the Rules.** The Examiner will be the person in charge of the exam. Listen carefully when he gives the test instructions. If you have any questions, ask the Examiner. There may be others who have the same questions but are afraid to ask. You will not be allowed to use a calculator for the test nor will you be allowed to leave the room or smoke during the test.
2. **Budget Your Time.** Before you begin the test, look it over and decide how much time you can spend on each section. Do not waste too much time trying to answer the questions you find hard, since this may not leave you enough time to do the easier ones. All questions count the same. That means you get the same credit for correctly answering the easy questions as you do for answering the hard questions. Therefore, answer easy questions first, then come back to the harder ones if you have time. The Examiner will notify you after you have been working one hour, and then again fifteen minutes before your time is up. Use this information to help pace yourself.
3. **Read the Question Carefully.** Read all the questions and directions carefully. Do not assume that you know what a question is asking after reading the first few words. Read the entire question. After you have read a question, read all the possible answer choices. Your task is to pick out the best answer. You cannot pick out the best answer until you know all the answer choices - so read them all.
4. **Set Aside Wrong Choices.** If you are not sure which answer is correct, eliminate the choices you know are wrong. If you can narrow down the number of choices, you increase your chances of answering the question correctly.
5. **Answer All Questions.** Answer every test question. Even if you cannot eliminate any of the answer choices, take a guess. You have nothing to lose.
6. **Check Your Answer Sheet Often.** The answer sheet is numbered from top to bottom. Before you start the test, look over the answer sheet. If you have any questions, ask the Examiner. While taking the test, check your answer sheet every few questions to be sure you are using the right number to mark

your answer. Be particularly careful if you skip questions. Do not make any extra marks on your answer sheet. If you skip a question, it is better to make a note of it on your scratch paper rather than making a note in the margin of your answer sheet.

7. **Do Not Write in the Test Booklet.** Scratch paper will be provided. Do any figuring or make any notes on the scrap paper. Do not make any marks in or on the test booklet.
8. **Do Your Own Work.** Rely on your own ability. Test takers who are caught copying are disqualified. Besides, your neighbor may not know as much as you do.
9. **Check Your Work.** After you have answered all the questions on the test, check your work. Have you answered all the questions you were supposed to answer? Make sure you have marked the answer sheet properly. When you review the answer sheet, do not look for patterns in order of answer choices. Tests are not designed to have patterns for correct answers.

Description and specific hints for taking the various parts of the multiple-choice test:

Lecture Notes: Part of your training as a new firefighter will be in the form of a classroom lecture which will require you to listen to an oral presentation (lecture) and to take written notes about what you have heard. You must then use your notes at a later time in learning the subject matter. This portion of the test is designed to evaluate your ability to select and record (take notes on) important information from an oral presentation. Included with your practice materials (in the back of this booklet) is a one page lecture titled "ACQUIRED IMMUNE DEFICIENCY SYNDROME," and two blank sheets of notebook paper. You should have someone read the lecture to you. As you listen to the lecture, use the notebook paper to take written notes on the facts and figures discussed in the lecture. The written notes that you take are important, because you will use these notes later in the test in order to answer questions in your practice test. It is very important that you listen carefully and take plenty of notes.

On the actual test, the taped lecture will be heard immediately after completion of the oral directions test. You will save your written notes in order to refer to them when you get to that section of test questions that pertain to the lecture.

(NOTE: The information in the lecture is for testing purposes only. It is not a true representation of actual facts or figures.)

Learning Ability and Memorizing Information: As you begin your job as a firefighter, you will be exposed to much new information which will have to be learned quickly and committed to memory and then recalled. This portion of the test is designed to test your ability to learn and memorize new items of information and then recall the information. Included with your practice materials (in the back of this booklet) is a sheet titled "TRAFFIC SIGNS" that has six "codes," each of which contains three signs or placards. When you are ready to begin your practice test, you should have someone time you for 7 minutes during which you are to learn and memorize which placards are assigned to the 6 codes. When your time is up, turn the sheet of signs face down, and begin your practice test. The first five questions are based on what you have just learned.

Reading Comprehension: Your job as firefighter requires that you be able to read and comprehend written material such as that found in training manuals. In this portion of the test, you will be required to read some written material, and then answer questions based on the information presented. In answering these questions you should select the one statement which is best supported by the written material, using only the information provided. Three of the choices may or may not be true, but the information cannot be determined as correct from reading the written material. The correct answer is the only statement which can be determined as correct from reading the information contained in the written material.

Prioritizing/Problem Solving:

Prioritizing: Sometimes a firefighter will be confronted with a situation that requires him to make a decision as to what to do first, or what should receive top priority. Each question in this section consists of four problem situations which a firefighter might encounter. You should review the choices carefully and then select the one which should be handled first. You should also assume that you are required to attend to and deal with each of the situations personally, and that you cannot deal with two situations at the same time.

Problem Solving: A firefighter must have the ability to analyze information (determine relationships between items or to recognize patterns) in order to identify problems and appropriate solutions. Each question in this section consists of a series of three different but related figures. You should determine how these figures are related and then decide which figure should be next

(fourth) in the series. Two examples have been provided at the beginning of this section, and you should read the directions carefully.

Human Relations: As a firefighter, you will be interacting with others from various backgrounds. The questions in this section evaluate your ability to assess and effectively deal with problem situations involving other individuals in the work setting.

Math: Frequently a firefighter has to use simple mathematical calculations in the work setting. The questions in this section test your knowledge of basic mathematical operations and your ability to perform calculations accurately.

Mechanical Aptitude: A firefighter must possess the aptitude for learning and applying mechanical principles involved in using tools, equipment, and machinery, and in understanding the principles of building construction. The questions in this section evaluate your understanding of basic mechanical and structural concepts.

Maps/Diagrams/Spatial Relations:

Maps/Diagrams: A firefighter must have the ability to read street maps and simple diagrams in order to find a location and the best route to the location. The questions in this section require you to evaluate information presented in a map or diagram, and to make decisions based upon this evaluation.

When a map is involved, remember the following guidelines: One-way streets are indicated by arrows pointing in the direction of traffic flow. If no arrows are present, traffic flows in both directions. All traffic laws must be observed. Always choose the most direct route without breaking any traffic laws. North is indicated by a legend on the map.

When a diagram of a dwelling or building is involved, all necessary information is included, either on the diagram itself or in a legend accompanying it.

Spatial Relations: A firefighter must have the ability to sense his location in space and to perceive how objects are located relative to one another in space. The questions in this section use simple pictures and diagrams to evaluate this ability.

PRACTICE MULTIPLE-CHOICE TEST

The next section contains practice questions that are very similar to those on the test. You may actually practice by marking your answers on the sample answer sheet. A discussion of the correct answers begins on page 37.

To closely simulate the actual test, you should remove the lined paper (two sheets) and lecture titled "ACQUIRED IMMUNE DEFICIENCY SYNDROME" from your practice materials. Have someone read the lecture to you as you take notes. Put your notes aside to use later in the test.

Next, before you open the practice test, remove the sheet with the codes and symbols from your practice materials. Have someone time you for 7 minutes as you memorize this information. At the end of the 7 minutes, turn the codes face down and continue with the practice test.

(Continue to next page)

MULTIPLE CHOICE

DIRECTIONS: Read each question and its numbered answers, and decide which answer is best. Find the space numbered the same as the number you have chosen and blacken this space with your pencil. Be sure that the space you mark is in the row numbered the same as the question you are answering. Be sure that your marks are heavy and black. If you want to change an answer, erase completely the answer you have marked, and mark the right answer.

LEARNING ABILITY AND MEMORIZING INFORMATION

Answer the following 5 questions based upon the placard information which you have learned and memorized.

1. Which of the following placards is classified CODE 2?

1.



2.



3.



4.



2. Which of the following placards is classified CODE 3?

1.



2.



3.



4.



3. Which of the following placards is classified CODE 5?

1.



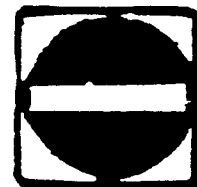
2.



3.

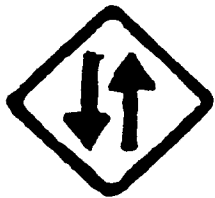


4.

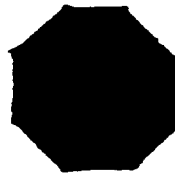


4. Which of the following placards is classified CODE 6?

1.



2.



3.



4.



5. Which of the following placards is classified CODE 1?

1.



2.



3.



4.



LECTURE NOTES

Answer the following 5 questions by referring to the notes that you took during the lecture.

6. How many cases of AIDS have been diagnosed since 1981?
 1. 1,600,000.
 2. 1,600.
 3. 160,000.
 4. 16,000.
7. What is the estimated number of people who will contract the AIDS virus?
 1. 1,000,000.
 2. 100,000.
 3. 2,000,000.
 4. 200,000.
8. Which group of people make up 17% of the reported cases of the AIDS virus?
 1. Hemophiliacs.
 2. Intravenous drug users.
 3. Heterosexuals.
 4. Homosexual or bisexual men.
9. What is the total number of Emergency Medical Service personnel that have contracted the AIDS virus while providing emergency medical care?
 1. 73.
 2. 17.
 3. 2.
 4. 0.
10. Which of the following agents is recommended for mixing with water to clean blood spills on equipment?
 1. Ammonia.
 2. Peroxide.
 3. Chlorine bleach.
 4. Baking soda.

READING COMPREHENSION

Answer the following 3 questions by reading the paragraphs and deciding which statement is best supported by the paragraph.

11. During the last 50 years, the American fire service has evolved from a loosely organized, social collection of individuals to the most highly organized and best trained branch of any municipal government. However, it is a well known fact that a very large percentage of the fire service is made up of volunteer firefighters. The word "volunteer" is not intended to mean the opposite of the word "professional" when dealing with the fire service. There are volunteer firefighters who are as professional in their training and activities in the fire service as their full-time paid counterparts.

With reference to the above comparison between paid and volunteer firefighters, which of the following statements would be most correct?

1. Paid firefighters are professionals; volunteer firefighters are amateurs.
 2. Paid firefighters are always more proficient than volunteers.
 3. Volunteers have to work harder than paid firefighters.
 4. There are volunteer firefighters who are as professional as their full-time paid counterparts.
12. Records of certain kinds are of vital importance to every business. Their loss by fire may mean the discontinuance of a going business, even though other physical property of the business can be quickly replaced. In general, it can be said that equipment designed for the protection of records from loss by fire will also be adequate against burglary.

According to the above quotation,

1. equipment that is adequate to protect loss of records from fire is generally useless in prevention of burglary.
2. the loss of important records may mean that fire insurance cannot be collected.
3. the continued existence of a business may be dependent upon preventing the loss of important records by fire or from burglary.
4. business records have, in general, been very inadequately protected from loss by either fire or burglary.

13. Dwelling roofs are usually built of wood supporting members called "rafters" to which roof sheathing is fastened. The roof covering material is then applied to the roof sheathing. Roof coverings may be wood shingles, composition shingles, composition roofing paper, tile, slate or a built-up tar and gravel surface. The roof covering is the exposed part of the roof, and its primary purpose is to afford protection against the weather. The selection of a proper roof covering is important from a fire protection standpoint because it may be subjected to sparks and blazing branches if a nearby building should burn.

According to the above paragraph,

1. roof sheathing may be wood shingles, composition shingles, roofing paper, tile, and slate.
2. the primary purpose of the roof covering is to afford protection against the weather.
3. rafters are often exposed to sparks and blazing branches if a nearby building should burn.
4. the roof sheathing is the exposed part of the roof.

(Continue to next page)

A. CLEANING AND CARE OF HOSE AND COUPLINGS

1. Fire hose shall be thoroughly cleaned after use. If only dusty, the hose should be swept clean. If muddy, the hose should be washed with water and scrubbed with broom if necessary. If hose is not clean after scrubbing with water, a mild detergent may be used. However, no cleaning solvent nor harsh cleanser should ever be used.
2. Hose couplings should be inspected for imperfections and thoroughly cleaned after each use. All couplings should be washed with clean water, being very careful that the female end swivels properly. The use of IVORY soap in the cleaning and lubrication of coupling threads will assure smooth operation. THE USE OF OIL OR GREASE ON HOSE COUPLINGS IS PROHIBITED.
3. Care should be exercised to see that gaskets are in good condition and properly placed in the female coupling on all sizes of hose.

B. PROTECTIVE MEASURES

1. Care should be exercised not to drop couplings. Hose should be protected, as far as practical, from contact with acids, gasoline and oil, sharp objects, and extreme heat and cold. All hose should be dried thoroughly before rolling and racking.

C. REPAIRS

1. No attempt shall be made by any firefighting unit personnel to repair any fire hose, swivels, or couplings at their quarters. All fire hose and fittings needing repair shall be cleaned, dried, rolled, and sent to the Fire Department maintenance garage along with a written report stating the defect to the Hose-Test-Maintenance Committee who shall provide Central Records with copies.

On the facing page is an excerpt from departmental procedures on the cleaning and care of hose and couplings. Use these procedures in answering the following 3 questions.

14. What method should be used first to attempt to clean a fire hose if it is muddy?
1. The hose should be swept clean.
 2. The hose should be washed with water and scrubbed with a broom if necessary.
 3. A mild detergent should be used, followed by a cleaning solvent if necessary.
 4. A gentle-action abrasive cleaner should be used on trouble spots.
15. What should be used to lubricate coupling threads?
1. Ivory soap.
 2. WD40.
 3. Light Oil.
 4. Grease.
16. Where should gaskets be properly placed after insuring that they are in good condition?
1. On the hose.
 2. On the male coupling.
 3. In the female coupling.
 4. In the swivel mechanism.

(Continue to next page)

PRIORITIZING/PROBLEM SOLVING

Each of the following 3 items consists of four problem situations which a firefighter might encounter. Review the choices carefully, and select the one which should be handled first. Assume that you are required to attend to and deal with each of the situations personally, and cannot deal with two situations at the same time.

PRIORITIZING

17. There has been a boating accident involving two boats on a lake. Both boats still contain one person. Which should be handled first?
 1. A reporter is demanding to know what has happened.
 2. One of the boaters is lying on the bank with a simple fracture of the arm.
 3. One of the boats is on fire and is drifting towards a refueling dock.
 4. The owner of one of the boats wants you to save the contents of his boat before it sinks.

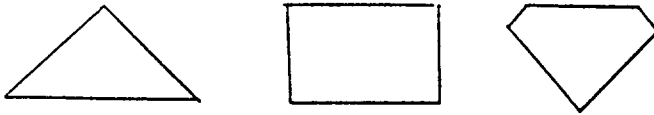
18. A school bus filled with children has been involved in an accident with a garbage truck. Which situation should be dealt with first?
 1. Garbage has spilled onto the street and is blocking traffic.
 2. A fire hydrant was knocked over and water is flowing freely from it.
 3. A child has a broken nose and is crying.
 4. A child is having convulsions and seizures.

19. A small private plane has crashed in a residential area. Which of the following should be dealt with first?
 1. Keeping the fire under control.
 2. Finding out who owned the airplane.
 3. Gathering personal belongings that have been scattered over several yards.
 4. Recovering the bodies from inside the airplane.

PROBLEM SOLVING (EXAMPLES)

Each of the following questions consists of a series of three different but related figures. You should determine how these figures are related and which figure should be the fourth in the series.

Example:

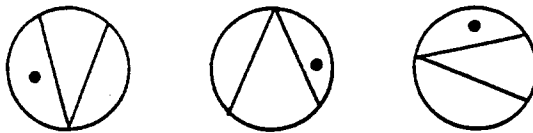


Notice that the number of sides increased with each figure. The first figure had 3 sides, the second figure had 4 sides, and the third figure had 5 sides. You should therefore look at the possible answers and select a figure with 6 sides:



Answer choice 2 has 6 sides and would therefore be the correct answer

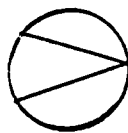
Consider another example which is a little more difficult:



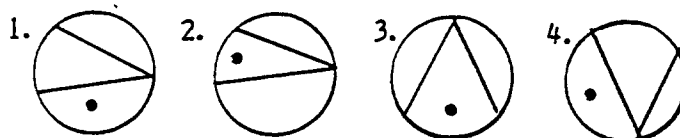
It is useful to consider the two different elements of this design (the dot and the "V") separately. Notice that the "V" points down, up, and then to the left:



The next logical progression would be for the "V" to point to the right:



Now consider the dot. It first appears on the left, then the right, and finally the top. The logical place for the dot to appear next would be at the bottom. By combining the two elements of the design, the correct answer would have the "V" pointing to the right with the dot at the bottom:

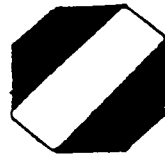
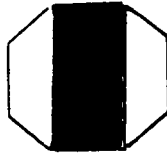
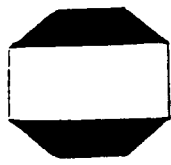


Answer choice 1 would then be the appropriate answer for this question.

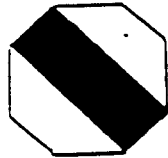
PROBLEM SOLVING

Answer the following 3 questions by deciding which figure should appear next in the series.

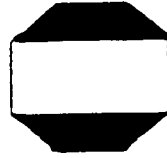
20.



1



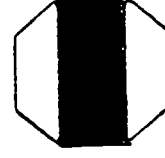
2



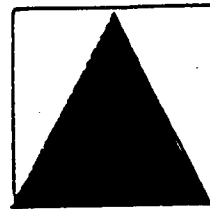
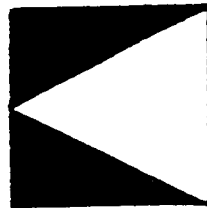
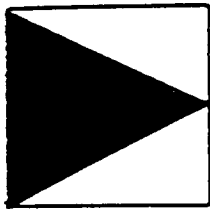
3



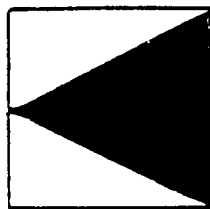
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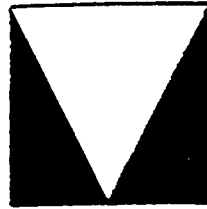
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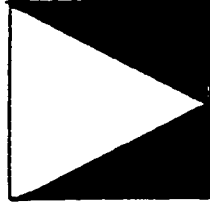
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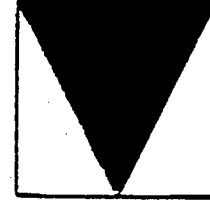
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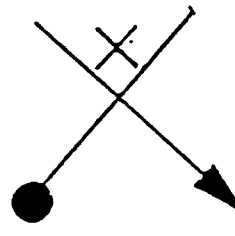
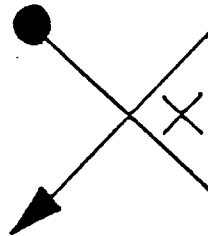
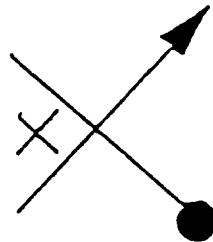
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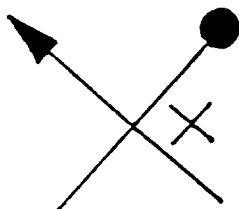
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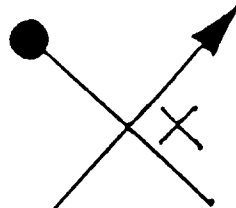
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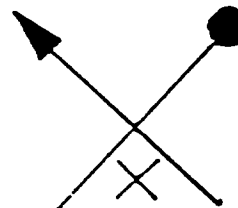
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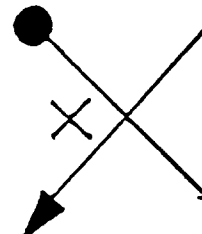
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HUMAN RELATIONS

Answer the following 3 questions by deciding which of the answer choices is the best way to handle the situation.

23. You and another firefighter have completely opposite political views. Very often he attempts to draw you into a discussion which usually ends in an argument. What should you do to avoid future arguments with this firefighter?
1. Ignore him when he attempts to discuss politics.
 2. Discuss the problem with the firefighter and suggest avoiding political discussion between the two of you.
 3. Continue discussing politics, but stop when the discussion becomes heated.
 4. Ask your Fire Captain to prohibit political discussions around the station.
24. During the evening meal, some of the firefighters began discussing a rumor that has been circulating about another firefighter. The firefighter being discussed is a close friend. What should you do?
1. Listen to the comments and then add what you know to be true.
 2. Confront the other firefighters and tell them not to talk about your friend.
 3. Tell your supervisor what the firefighters are saying and ask him to stop the gossip.
 4. Leave the group without making a comment.
25. Your Fire Captain is retiring after 30 years of service with the department and fellow firefighters are collecting for a gift. You never got along well with your Captain. What should you do?
1. Contribute your share to the gift and say nothing.
 2. Contribute, but explain that you are participating only because the others are.
 3. State your dislike for the man and refuse to contribute.
 4. Refuse to contribute and plan not to be present when the gift is presented.

(Continue to next page)

MATH

Answer the following 2 questions by performing the necessary calculations.

26. $2(24.5) \times .35 =$

- 1. 17.15
- 2. 21.0875
- 3. 210.0875
- 4. 1,715.00

27. $(11 + 17) - 4 =$

- 1. 23
- 2. 24
- 3. 28
- 4. 32

Use the values for the letters listed below in solving the following 2 equations:

$$\begin{aligned} A &= 10 \\ B &= 2 \\ C &= 1.5 \\ D &= 100 \end{aligned}$$

28. $\frac{(A^2 - A) + B}{D} =$

- 1. 0.12
- 2. 0.82
- 3. 0.92
- 4. 1.80

29. $(B^2 + D) - A =$

- 1. 84.0
- 2. 0.94
- 3. 94.0
- 4. 104.0

Answer the following 2 questions by reading the word problem and performing the necessary calculation.

30. The maximum weight allowed on an extension ladder is 750 pounds, including personnel and equipment. How much equipment could be carried by each firefighter if there are 3 firefighters on the ladder weighing a total of 570 pounds? (Note: Assume that all firefighters will carry an equal load.)

1. 28 pounds.
2. 60 pounds.
3. 180 pounds.
4. 280 pounds.

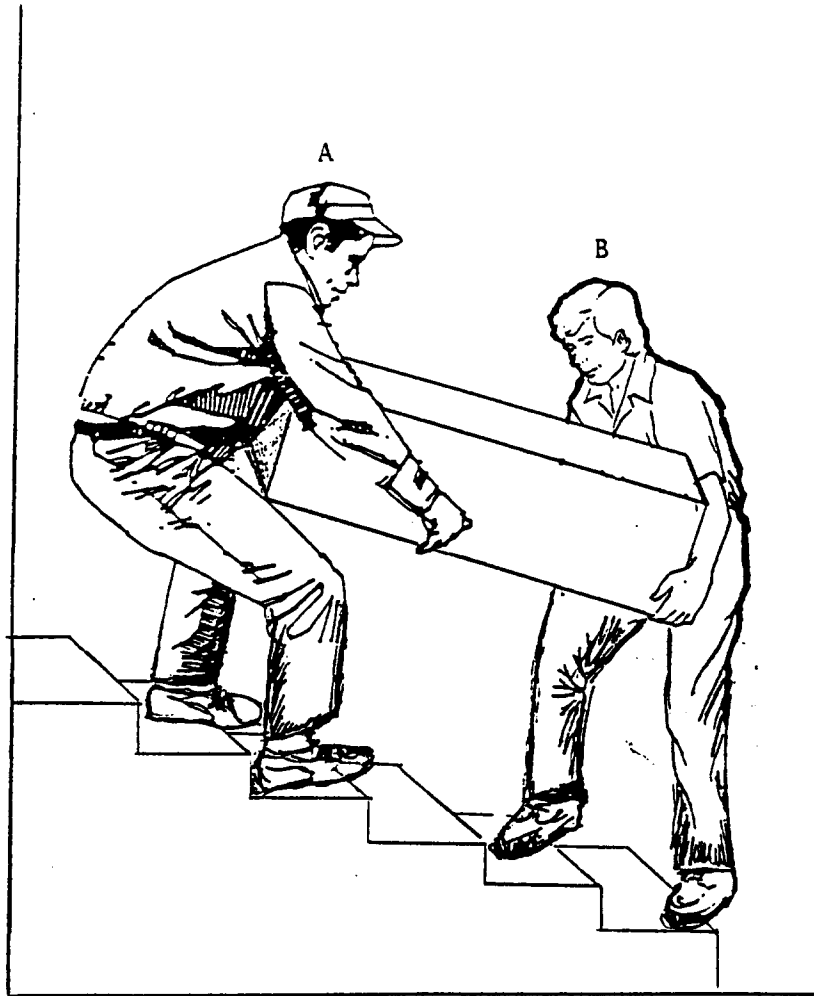
31. Fire department pumpers can pump more water through larger diameter hoses than through smaller diameter hoses. Each inch in the diameter of a hose increases the amount of water that may be pumped through the hose by 69 gallons per minute. What size hose should be used to pump 207 gallons of water per minute more than can be pumped with a 2-inch hose?

1. 2-inch hose.
2. 3-inch hose.
3. 5-inch hose.
4. 6-inch hose.

(Continue to next page)

MECHANICAL APTITUDE

Answer the following 2 questions by studying the pictures and deciding on the correct answer.



32. Which person is having to carry the most weight, assuming that the weight in the box is evenly distributed?

1. Person "A" if going up the stairs.
2. Person "B" if going up or down the stairs.
3. Person "A" if going down the stairs.
4. Persons "A" and "B" will be carrying equal weight, regardless of the direction.

FIGURE 1



FIGURE 2

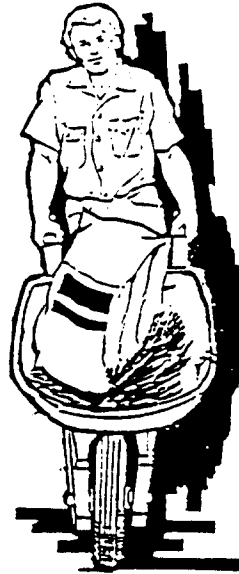


FIGURE 3



FIGURE 4

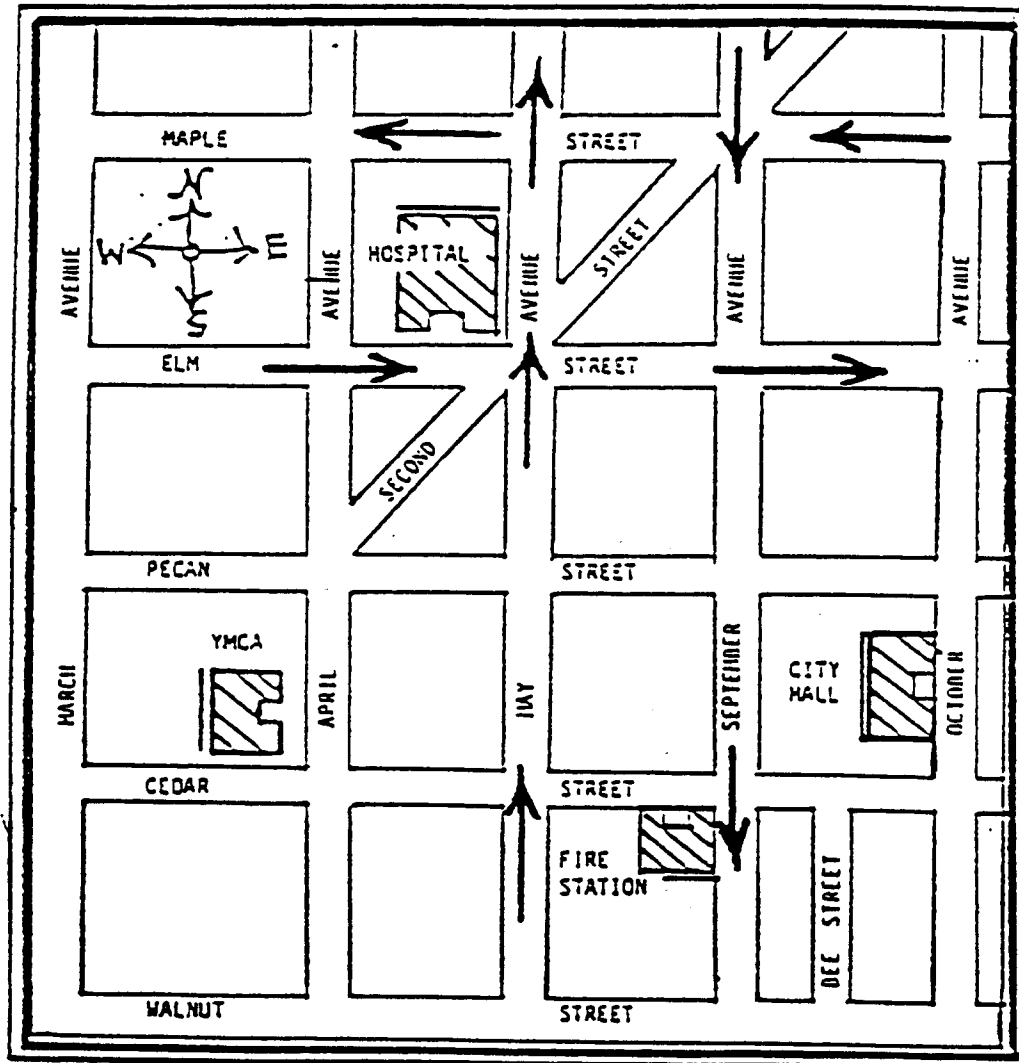


33. Which of the above wheelbarrows would be easiest to push over rough ground?

1. Figure 1.
2. Figure 2.
3. Figure 3.
4. Figure 4.

SAMPLE AREA MAP

(To be used with the sample map questions on the facing page.)



MAPS, DIAGRAMS, AND SPATIAL RELATIONS

The following 2 questions refer to the map on the facing page. One-way streets are indicated by arrows pointing in the direction of traffic. If no arrows are present, the traffic flows in both directions. No U-turns are to be made in solving the problem, and all traffic laws must be observed. If a choice of routes is given, always choose the most direct route.

34. To ride from the YMCA building to the hospital the most direct route is

1. Cedar Street and May Avenue.
2. March Avenue and Elm Street.
3. May Avenue and Maple Street.
4. April Avenue and Elm Street.

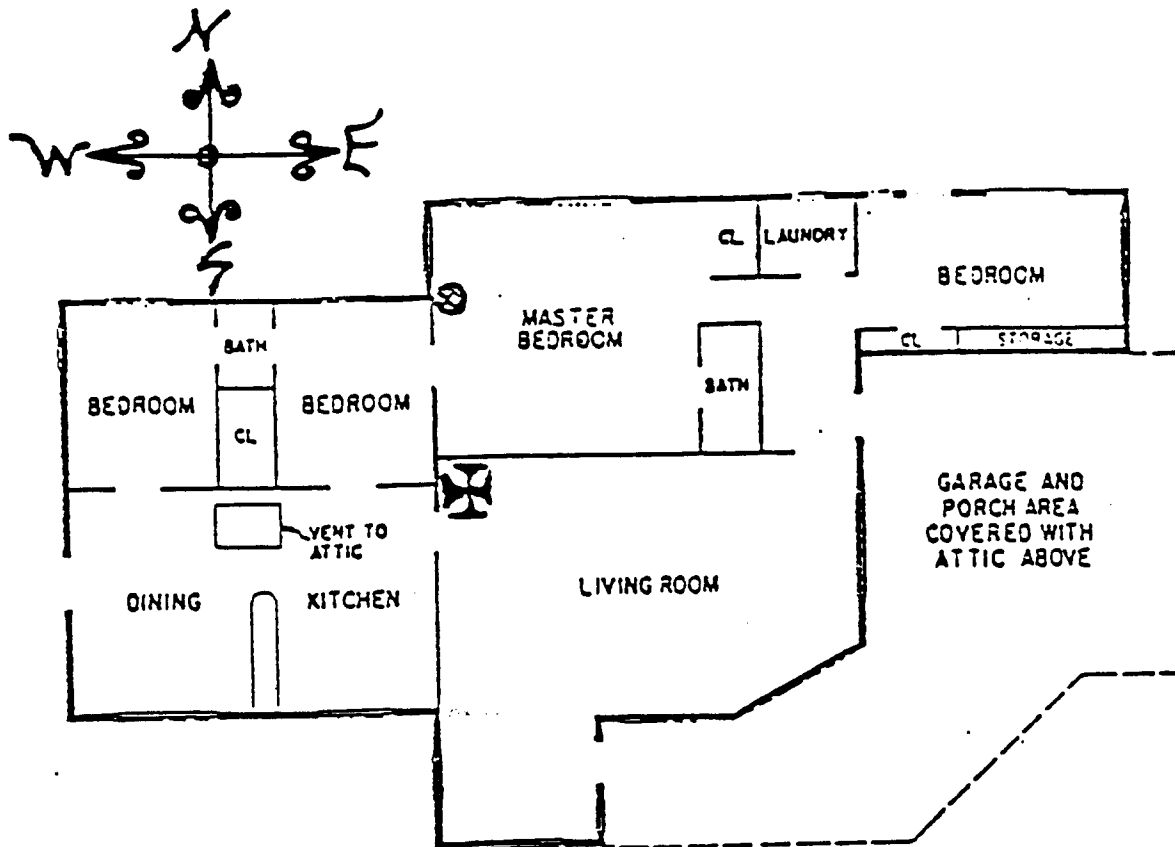
35. To go from City Hall to the Fire Station by the most direct route, the best streets to use are

1. September Avenue and Cedar Street.
2. August Avenue and Walnut Street.
3. October Avenue and Cedar Street.
4. September Avenue and Walnut Street.

(Continue to next page)

SAMPLE DIAGRAM

(To be used with the sample diagram questions on the facing page.)



⊗ A.C. POWERED SMOKE DETECTOR INSTALLED 6' 2" ABOVE FLOOR
 ⊕ ORIGIN

Use the sample diagram on the facing page to answer the 3 questions which follow:

36. Of the following areas, the one closest to the origin of the fire is the

1. garage and porch area.
2. laundry room.
3. master bedroom.
4. dining room area.

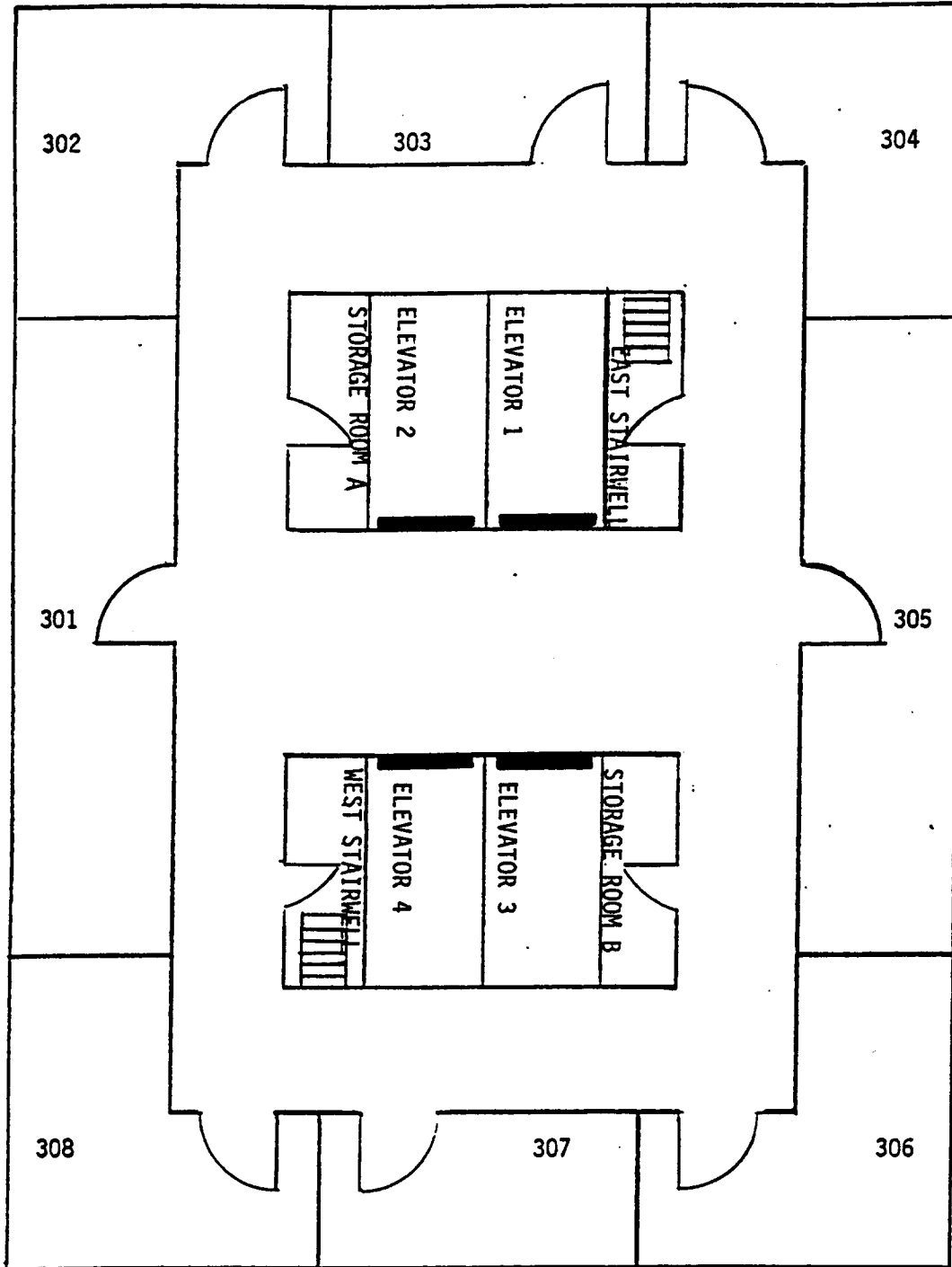
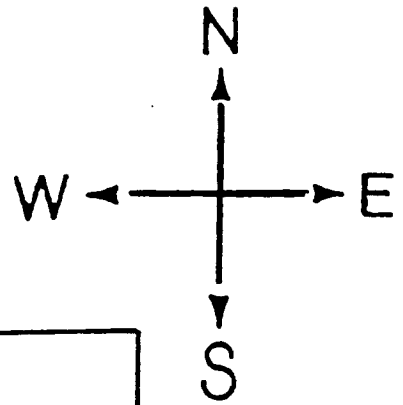
37. In what room is the smoke detector located?

1. The living room.
2. The kitchen-dining room area.
3. The garage and porch area.
4. The master bedroom.

38. How many bedrooms are there in the house?

1. One.
2. Two.
3. Three.
4. Four.

(Continue to next page)



Use the diagram on the facing page to answer the following 3 questions.

39. You must rescue an individual who is trapped in room 307. The entire hallway is completely filled with smoke, and you cannot see where you are going. Your plan is to enter the hallway from the west stairwell, cross the hallway to the opposite wall, and keep your hand on the wall as you proceed south, feeling for doorways as you go. You will know that you have reached room 307 when you get to which door?
(NOTE: Do not count the stairwell door as you enter the hall.)
1. 7th door.
 2. 6th door.
 3. 3rd door.
 4. 2nd door.
40. After the rescue has been completed and the individual is safely away from the building, your Fire Captain instructs you to return to the third floor, where it has been reported that there is fire in storage room A. In which direction does the door to storage room A face?
(Assume that the door is closed.)
1. South.
 2. North.
 3. West.
 4. East.
41. Fire is spreading from storage room A toward room 302. In which direction is the fire moving?
1. Northeast.
 2. Northwest.
 3. Southeast.
 4. Southwest.

END OF PRACTICE TEST

CORRECT ANSWERS

CORRECT ANSWERS TO THE PRACTICE TEST

The next section of this booklet contains the correct answers and explanations to both parts of the examination. When you have answered all questions in the Practice Test, turn to this section and compare your answers with the correct ones.

PART 1

CORRECT ANSWERS TO THE ORAL DIRECTIONS PART OF THE FIREFIGHTER PRACTICE TEST

FOLLOWING ORAL DIRECTIONS

106. The correct answer is: For number 106, you should have marked answer number 4, because 5:30 a.m. is the earliest in the morning.
- 103/104. The correct answers are: For number 103, you should have marked a 2, because the smaller circle is next to the larger square. For number 104, you should have marked answer 3, because the larger square has an "X" in it.
105. The correct answer is: For number 105, you should have marked answer number 3. If the words were placed in correct alphabetical order, "airplane" would be number 3.
- 101/102. The correct answers are: You should have marked a 2 for question number 101 and 4 for question number 102, because 7:45 is the same as a quarter to eight.

CORRECT ANSWERS ORAL DIRECTIONS TEST

98	(1)	(2)	(3)	(4)	(5)
99	(1)	(2)	(3)	(4)	(5)
100	(1)	(2)	(3)	(4)	(5)
101	(1)	(2)	(3)	(4)	(5)
102	(1)	(2)	(3)	(4)	(5)
103	(1)	(2)	(3)	(4)	(5)
104	(1)	(2)	(3)	(4)	(5)
105	(1)	(2)	(3)	(4)	(5)
106	(1)	(2)	(3)	(4)	(5)
107	(1)	(2)	(3)	(4)	(5)

PART 2

Correct answers to the Multiple Choice part of the Firefighter Practice Test.

Section I:

1. The correct answer is number 4 because that placard is in code 2.
2. The correct answer is number 2 because that placard is in code 3.
3. The correct answer is number 1 because that placard is in code 5.
4. The correct answer is number 1 because that placard is in code 6.
5. The correct answer is number 2 because that placard is in code 1.

Section II: LECTURE NOTES

6. The correct answer is number 4.
According to the lecture, 16,000 cases of AIDS have been diagnosed since 1981.
7. The correct answer is number 1.
The lecture states that 1,000,000 will contract the AIDS virus.
8. The correct answer is number 2.
According to the lecture, intravenous drug users make up 17% of the reported cases of the AIDS virus.
9. The correct answer is number 4.
The lecture states that there were no cases of Emergency Medical Service personnel who had contracted the AIDS virus.
10. The correct answer is number 3.
According to the lecture, the cleaning of equipment with a solution of chlorine bleach and water was recommended for blood spills.

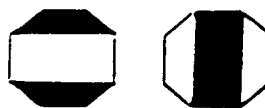
Section III: READING COMPREHENSION

11. The correct answer is number 4.
The paragraph clearly points out that "volunteer" is not intended to mean the opposite of "professional" when dealing with the fire service.
12. The correct answer is number 3.
The paragraph does say that loss of records may result in the "discontinuance of a going business".
13. The correct answer is number 2.
The paragraph clearly states that the primary purpose of the roof covering is to afford protection against the weather.
14. The correct answer is number 2.
Paragraph A1 clearly states that if the hose is muddy, it should be washed with water and scrubbed with a broom if necessary.
15. The correct answer is number 1.
Paragraph A2 lists two uses for Ivory soap. Lubricating coupling threads is mentioned as one of the uses.
16. The correct answer is number 3.
Paragraph A3 points out that gaskets that are in good condition are properly placed in the female coupling.

Section IV: PRIORITIZING/PROBLEM SOLVING

17. The correct answer is number 3.
To prevent a possible explosion which may cause many more injuries and or deaths has top priority if no one else is in a life threatening situation.
18. The correct answer is number 4.
A child who is having convulsions and seizures is in the most immediate danger, and should be top priority.
19. The correct answer is number 1.
The recovering of bodies from inside the airplane cannot be done until the fire is under control.

20. The correct answer is number 1.



1 2

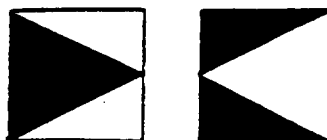
From figure 1 to figure 2, the position of the rectangle changed from horizontal to vertical (opposites). Also, the color of the rectangle changed from white to black.



3 4

From figure 3 to figure 4, the diagonal rectangle changed to the opposite direction. Also, the color of the rectangle changed from white to black.

21. The correct answer is number 2.



1 2

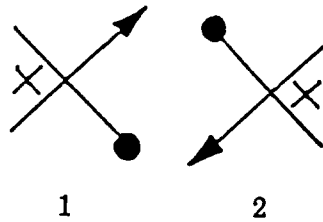
From figures 1 to figure 2, the point of the "V" changes to the opposite direction, and the "V" changes in color from black to white.



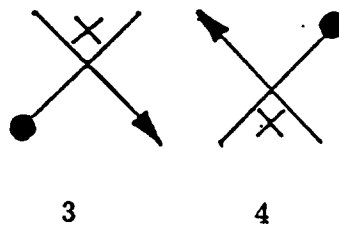
3 4

From figure 3 to figure 4, again the point of the "V" changes to the opposite direction and the "V" changes in color from black to white.

22. The correct answer is number 3.



From figure 1 to figure 2, the smaller "X" moves to the opposite side of the larger "X" (horizontally).



From figure 3 to figure 4, the smaller "X" has moved from the top position of the larger "X" down to the bottom position (vertically).

(Continue to next page)

Section V: HUMAN RELATIONS

23. The correct answer is number 2.

The most positive approach to the situation is to confront it directly.

24. The correct answer is number 1.

When dealing with a negative situation (gossip) it is best to clarify rumors with correct facts and information in a positive way.

25. The correct answer is number 1.

In this instance, it would be best to put aside personal differences and contribute as part of the team.

Section VI: MATH

26. The correct answer is number 1.

Two steps need to be taken in order to find the answer to this problem. First, multiply 2×24.5 , which equals 49. Then multiply $49 \times .35$ to get the correct answer of 17.15.

27. The correct answer is number 2.

First, solve the problems inside the parentheses: $11 + 17$ equals 28. Next, subtract 4 from 28 to get the correct answer of 24.

28. The correct answer is number 3.

Four steps are necessary to complete this problem. First, $A^2 = 10^2$ or $10 \times 10 = 100$. Second, solve the problem inside the parentheses: $(100 - 10) = 90$. Third, add $90 + 2$ which equals 92. Finally, divide 92 into 100 (D) for the correct answer of .92.

$$\frac{A^2 - A + B}{D} = \frac{(10^2 - 10) + 2}{100} = .92$$

29. The correct answer is number 3.

Three steps are necessary to complete this problem. First, $B^2 = 2^2$ or $2 \times 2 = 4$. Second, solve the problem inside the parentheses: $(4 + 100) = 104$. Third, subtract 104 from 10 to get the correct answer of 94. $(B^2 + D) - A = (2^2 + 100) - 10 = 94$.

30. The correct answer is number 2.

If the total of 3 firefighters and equipment can be a maximum of 750 pounds, then the three firefighters can carry a total weight of 180 pounds ($750 - 570$). If each firefighter is carrying an equal load, then each one could carry 60 pounds ($180 \div 3$).

31. The correct answer is number 3.

To find out how many more inches of hose diameter needed to be added onto the 2 inch hose already in use, divide 69 into 207, which equals 3. By adding the 3 to the 2 which you already have, the correct answer is 5 inch hose.

Section VII: MECHANICAL APTITUDE

32. The correct answer is number 2.

Regardless of which direction the two men are going, if man A is higher than man B, gravity will make the box heavier for man B.

33. The correct answer is number 1.

The larger the wheel, the easier the wheelbarrow will maneuver over rough ground. Smaller wheels, or multiple wheels will not maneuver over rough ground as well.

Section VII: MAPS, DIAGRAMS, AND SPATIAL RELATIONS

34. The correct answer is number 4.

Locate both buildings on the map. The YMCA is in the second block north from the bottom left side of the map, and the hospital is one block east and three blocks north. By obeying all traffic laws, the most direct route is north on April Avenue (front of YMCA) and east on Elm Street to the hospital.

35. The correct answer is number 3.

Both City Hall and the Fire Station are located in the southeast portion of the map. The most direct route from City Hall to the Fire Station would be south on October Avenue and east on Cedar Street to the Fire Station.

36. The correct answer is number 3.

The legend accompanying the diagram shows the symbol used for the "origin of the fire." This symbol is located in the northwest corner of the living room. The listed area closest to the origin of the fire would have to be the master bedroom, as the other areas listed are all farther away.

37. The correct answer is number 4.

The legend also shows the symbol used to designate the location of smoke detector. This symbol appears in only one room on the diagram - the master bedroom.

38. The correct answer is number 4.

Each room in the diagram is identified. By counting the number of bedrooms identified in the diagram, the total number would be four.

39. The correct answer is number 4.

If you followed the instructions, the first door your reach would be room 308, and the next door (second) would be room 307.

40. The correct answer is number 3.

If the door to storage room A is in the closed position, it faces west, according to the compass provided on the diagram.

41. The correct answer is number 2.

Using the compass, if the fire is moving from storage room A toward room 302, it is moving to the northwest.

FIREFIGHTER

PRACTICE MATERIALS

NOTE: Remove all of the following pages from the booklet for use when answering the practice questions.

ACQUIRED IMMUNE DEFICIENCY SYNDROME

Acquired Immune Deficiency Syndrome, otherwise known as "AIDS", is a very serious disorder in which the body loses its ability to fight off infection. Sixteen thousand cases of AIDS have been diagnosed in the United States since 1981, and half of those affected have died. It is estimated that up to one million people will develop AIDS, which has no known cure. Naturally, AIDS has caused a great deal of concern in the general public and in health care providers. This concern can be alleviated somewhat by knowing which groups are at high risk of contracting AIDS, and by taking precautions to guard against infection. AIDS is a communicable disease and is not transmitted through casual contact or direct contact with airborne agents. AIDS is transmitted through intimate sexual contact or by blood to blood contact.

The following three groups of people are most at risk for contracting the AIDS virus:

- 1) Homosexual or bisexual men with multiple sex partners (73% of reported cases).
- 2) Abusers of intravenous drugs who share needles (17% of reported cases).
- 3) Hemophiliacs and other people who have required transfusions of blood or blood products (2% of reported cases).

At present, there are no cases of Emergency Medical Service personnel who have contacted the AIDS virus while providing emergency medical care. The following procedures are recommended to minimize the chances of infection:

- 1) Use an airway and pocket mask when administering mouth to mouth resuscitation or CPR.
- 2) If possible, wear rubber surgical gloves when handling blood or body fluids.
- 3) Take extra care to avoid needle sticks when handling needles.
- 4) Avoid direct skin and mucous membrane contact with blood and body fluids of an AIDS patient.
- 5) Clean blood spills on equipment with a solution of chlorine bleach and water, using one fourth cup of bleach per gallon of water.
- 6) Place clothes or linens soiled by blood or body fluids in a plastic bag marked "blood contaminated". Launder such items using one half cup of bleach per load.

ORAL DIRECTIONS TEST

SAMPLE DIRECTIONS

- ① one day ② one hour ③ one minute ④ one week ⑤ one second

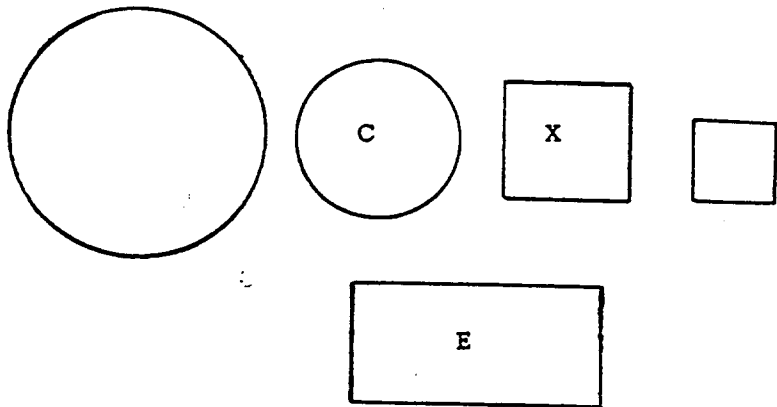
airplane

absent

accent

apple

angel

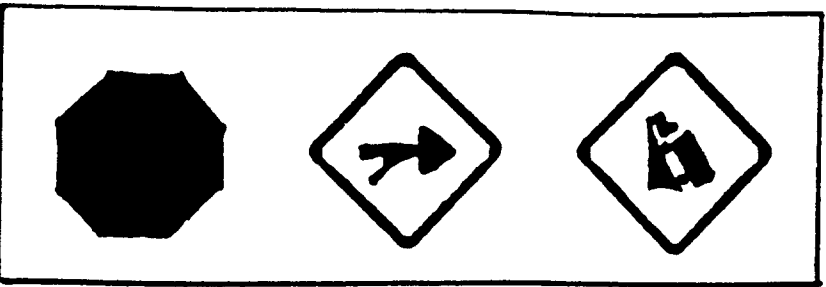


- ① 12,345
② 12,543
③ 12,453
④ 12,354
⑤ 12,534

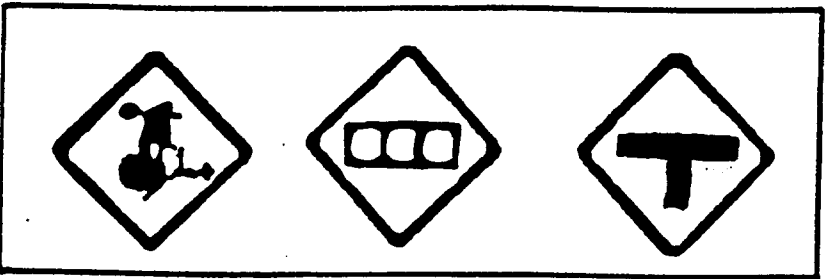
- ① 8:00 A.M. ② 6:29 P.M. ③ 7:02 A.M. ④ 5:30 A.M. ⑤ 4:00 P.M.

TRAFFIC SIGNS

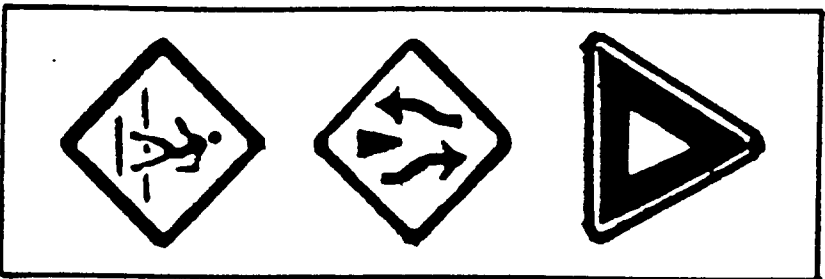
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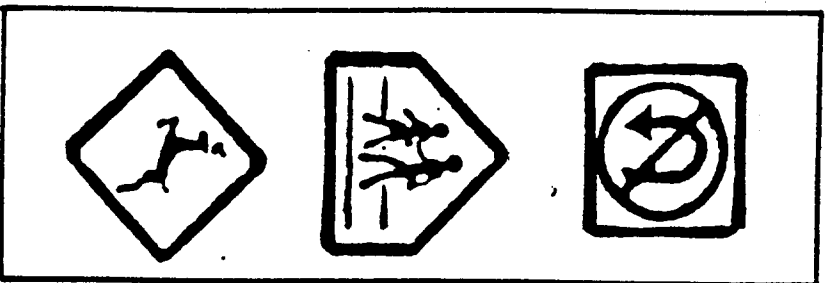
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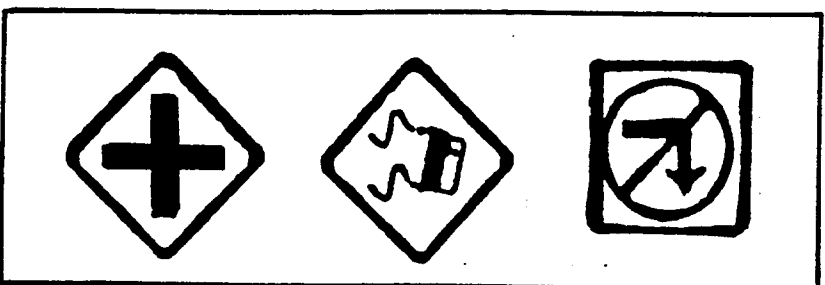
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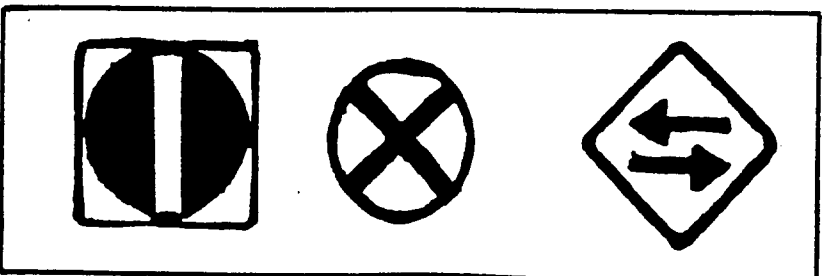
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5



CODE
6



OFFICE OF STATE EXAMINER
Municipal Fire And Police Civil Service

USE NO. 2 PENCIL ONLY

• EXAMPLE: 1 2 3 4 5

- ERASE *COMPLETELY* TO CHANGE

APPLICANT'S SIGNATURE

LAST NAME, FIRST NAME, MIDDLE INITIAL (Please leave a blank space between each name.)

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3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9

RACE CODES

W	=	WHITE
B	=	BLACK
H	=	HISPANIC
I	=	AMERICAN INDIAN
A	=	ASIAN
O	=	OTHER

SEX

(M)
(F)

AGE

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

For Office Use Only

IDENTIFICATION		OFFICE CODE				
FINGERPRINT	1	15	29	43	57	71
	2	16	30	44	58	72
	3	17	31	45	59	73
	4	18	32	46	60	74
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	6	20	34	48	62	76
	7	21	35	49	63	77
	8	22	36	50	64	78
	9	23	37	51	65	79
	10	24	38	52	66	80
	11	25	39	53	67	81
	12	26	40	54	68	82
	13	27	41	55	69	83
	14	28	42	56	70	84

JURISDICTION (CITY)

[illegible]

TEST NAME (CLASSIFICATION)

A	A	A	A	A	A	A	A	A	A	A	A	L
B	B	B	B	B	B	B	B	B	B	B	B	II
C	C	C	C	C	C	C	C	C	C	C	C	III
D	D	D	D	D	D	D	D	D	D	D	D	IV
E	E	E	E	E	E	E	E	E	E	E	E	V
F	F	F	F	F	F	F	F	F	F	F	F	1
G	G	G	G	G	G	G	G	G	G	G	G	2
H	H	H	H	H	H	H	H	H	H	H	H	3
I	I	I	I	I	I	I	I	I	I	I	I	4
J	J	J	J	J	J	J	J	J	J	J	J	5
K	K	K	K	K	K	K	K	K	K	K	K	6
L	L	L	L	L	L	L	L	L	L	L	L	7
M	M	M	M	M	M	M	M	M	M	M	M	8
N	N	N	N	N	N	N	N	N	N	N	N	9
O	O	O	O	O	O	O	O	O	O	O	O	10
P	P	P	P	P	P	P	P	P	P	P	P	11
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	12
R	R	R	R	R	R	R	R	R	R	R	R	13
S	S	S	S	S	S	S	S	S	S	S	S	14
T	T	T	T	T	T	T	T	T	T	T	T	15
U	U	U	U	U	U	U	U	U	U	U	U	16
V	V	V	V	V	V	V	V	V	V	V	V	17
W	W	W	W	W	W	W	W	W	W	W	W	18
X	X	X	X	X	X	X	X	X	X	X	X	19
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	20
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	21

BOOKLET NUMBER

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

TEST DATE

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

TEST ANSWERS (1-192)

1	1	2	3	4	5	49	1	2	3	4	5	97	1	2	3	4	5	145	1	2	3	4	5
2	1	2	3	4	5	50	1	2	3	4	5	98	1	2	3	4	5	146	1	2	3	4	5
3	1	2	3	4	5	51	1	2	3	4	5	99	1	2	3	4	5	147	1	2	3	4	5
4	1	2	3	4	5	52	1	2	3	4	5	100	1	2	3	4	5	148	1	2	3	4	5
5	1	2	3	4	5	53	1	2	3	4	5	101	1	2	3	4	5	149	1	2	3	4	5
6	1	2	3	4	5	54	1	2	3	4	5	102	1	2	3	4	5	150	1	2	3	4	5
7	1	2	3	4	5	55	1	2	3	4	5	103	1	2	3	4	5	151	1	2	3	4	5
8	1	2	3	4	5	56	1	2	3	4	5	104	1	2	3	4	5	152	1	2	3	4	5
9	1	2	3	4	5	57	1	2	3	4	5	105	1	2	3	4	5	153	1	2	3	4	5
10	1	2	3	4	5	58	1	2	3	4	5	106	1	2	3	4	5	154	1	2	3	4	5
11	1	2	3	4	5	59	1	2	3	4	5	107	1	2	3	4	5	155	1	2	3	4	5
12	1	2	3	4	5	60	1	2	3	4	5	108	1	2	3	4	5	156	1	2	3	4	5
13	1	2	3	4	5	61	1	2	3	4	5	109	1	2	3	4	5	157	1	2	3	4	5
14	1	2	3	4	5	62	1	2	3	4	5	110	1	2	3	4	5	158	1	2	3	4	5
15	1	2	3	4	5	63	1	2	3	4	5	111	1	2	3	4	5	159	1	2	3	4	5
16	1	2	3	4	5	64	1	2	3	4	5	112	1	2	3	4	5	160	1	2	3	4	5
17	1	2	3	4	5	65	1	2	3	4	5	113	1	2	3	4	5	161	1	2	3	4	5
18	1	2	3	4	5	66	1	2	3	4	5	114	1	2	3	4	5	162	1	2	3	4	5
19	1	2	3	4	5	67	1	2	3	4	5	115	1	2	3	4	5	163	1	2	3	4	5
20	1	2	3	4	5	68	1	2	3	4	5	116	1	2	3	4	5	164	1	2	3	4	5
21	1	2	3	4	5	69	1	2	3	4	5	117	1	2	3	4	5	165	1	2	3	4	5
22	1	2	3	4	5	70	1	2	3	4	5	118	1	2	3	4	5	166	1	2	3	4	5
23	1	2	3	4	5	71	1	2	3	4	5	119	1	2	3	4	5	167	1	2	3	4	5
24	1	2	3	4	5	72	1	2	3	4	5	120	1	2	3	4	5	168	1	2	3	4	5
25	1	2	3	4	5	73	1	2	3	4	5	121	1	2	3	4	5	169	1	2	3	4	5
26	1	2	3	4	5	74	1	2	3	4	5	122	1	2	3	4	5	170	1	2	3	4	5
27	1	2	3	4	5	75	1	2	3	4	5	123	1	2	3	4	5	171	1	2	3	4	5
28	1	2	3	4	5	76	1	2	3	4	5	124	1	2	3	4	5	172	1	2	3	4	5
29	1	2	3	4	5	77	1	2	3	4	5	125	1	2	3	4	5	173	1	2	3	4	5
30	1	2	3	4	5	78	1	2	3	4	5	126	1	2	3	4	5	174	1	2	3	4	5
31	1	2	3	4	5	79	1	2	3	4	5	127	1	2	3	4	5	175	1	2	3	4	5
32	1	2	3	4	5	80	1	2	3	4	5	128	1	2	3	4	5	176	1	2	3	4	5
33	1	2	3	4	5	81	1	2	3	4	5	129	1	2	3	4	5	177	1	2	3	4	5
34	1	2	3	4	5	82	1	2	3	4	5	130	1	2	3	4	5	178	1	2	3	4	5
35	1	2	3	4	5	83	1	2	3	4	5	131	1	2	3	4	5	179	1	2	3	4	5
36	1	2	3	4	5	84	1	2	3	4	5	132	1	2	3	4	5	180	1	2	3	4	5
37	1	2	3	4	5	85	1	2	3	4	5	133	1	2	3	4	5	181	1	2	3	4	5
38	1	2	3	4	5	86	1	2	3	4	5	134	1	2	3	4	5	182	1	2	3	4	5
39	1	2	3	4	5	87	1	2	3	4	5	135	1	2	3	4	5	183	1	2	3	4	5
40	1	2	3	4	5	88	1	2	3	4	5	136	1	2	3	4	5	184	1	2	3	4	5
41	1	2	3	4	5	89	1	2	3	4	5	137	1	2	3	4	5	185	1	2	3	4	5
42	1	2	3	4	5	90	1	2	3	4	5	138	1	2	3	4	5	186	1	2	3	4	5
43	1	2	3	4	5	91	1	2	3	4	5	139	1	2	3	4	5	187	1	2	3	4	5
44	1	2	3	4	5	92	1	2	3	4	5	140	1	2	3	4	5	188	1	2	3	4	5
45	1	2	3	4	5	93	1	2	3	4	5	141	1	2	3	4	5	189	1	2	3	4	5
46	1	2	3	4	5	94	1	2	3	4	5	142	1	2	3	4	5	190	1	2	3	4	5
47	1	2	3	4	5	95	1	2	3	4	5	143	1	2	3	4	5	191	1	2	3	4	5
48	1	2	3	4	5	96	1	2	3	4	5	144	1	2	3	4	5	192	1	2	3	4	5

